

Serial No. 09/871,089

-2-

IN THE CLAIMS

Kindly cancel claims 1-17 without prejudice and insert claims 18-32 in lieu thereof.

Claims 1-17 (canceled)

18. (new) Autogenously curable aerated concrete composition comprising:
- (1) about 100 parts by weight of non-aqueous components, said non-aqueous components including
 - (a) about 20 - about 80 wt% fly ash;
 - (b) about 10 - about 60 wt% Portland cement;
 - (c) about 0.001 - about 2.00 wt% reinforcing fiber;
 - (d) about 0.0001 - about 2.00 wt% Al activating agent;
 - (e) about 0.2 - 2.0 wt% of CaCl₂ accelerator; and
 - (2) water, said water being present in an amount of about 20 - about 60 % based on said 100 parts by weight of said non-aqueous components.
19. (new) Composition as recited in claim 18 wherein said Al activating agent comprises Al particles in a paste mixture.
20. (new) Composition as recited in claim 18 further comprising as a non-aqueous component, a thermal shrinkage control agent (f) present in an amount of 0.2 - about 1.5%.
21. (new) Composition as recited in claim 20 wherein said thermal shrinkage control agent (f) comprises a polyvinylacetate polymer/vinylacetate dibutylmaleate copolymer dispersion.
22. (new) Composition as recited in claim 18 wherein said fly ash comprises type "F" fly ash.

Serial No. 09/871,089

-3-

23. (new) Composition as recited in claim 18 wherein said fly ash is present in an amount of about 45-70 wt%, said Portland Cement being present in an amount of about 25-50%, said fibers being present in an amount of about 0.005-0.020 wt%, and said Al activating agent being present in an amount of about 0.001-0.020 wt%.

24. (new) Method for making a cementitious building material comprising providing the components of claim 18, mixing said non-aqueous components and water to form a cementitious mixture, placing said cementitious mixture into a mold having a volume of at least about 32 cubic feet, curing said cementitious mixture by autogenous heating in said mold at a temperature of about 150°F - about 180°F to form a cured material, removing said cured material from said mold and cutting said cured material into desired building material shapes.

25. (new) Method as recited in claim 24 further comprising curing said mixture by autogenously heating said mixture in said mold at time and temperature conditions as shown in Fig. 3.

26. (new) Method as recited in claim 24 further comprising, after said cutting, forming an assembly of said cut building material shapes and wrapping said assembly with a vapor impervious means to maintain moisture in said cut building material shapes to impart enhanced compressive strength to said shapes, wherein said shapes are blocks or panels.

27. (new) Method as recited in claim 26 further comprising, after said wrapping, allowing said wrapped assembly to set in said wrapped condition for at least three days.

28 (new) Method for making an assembly of aerated concrete building shapes comprising
a) providing non-aqueous components including fly ash, Portland cement, and foam activating agent;

Serial No. 09/871,089

-4-

- b) mixing said non-aqueous components with water to form a cementitious mixture;
- c) placing said cementitious mixture in a mold having a volume of at least about 32 cubic feet;
- d) autogenously heating said mixture in said mold at time and temperature conditions set forth in Fig. 3 to form a cured material;
- e) removing said cured material from said mold; and
- f) cutting said cured material from step e) into desired shape.

29. Method for making an aerated, cementitious building material comprising

- a) providing non-aqueous components including fly ash, Portland cement, and foam activator;
- b) mixing said non-aqueous components with water to form a cementitious mixture;
- c) placing said cementitious mixture in a mold having a volume of at least about 32 cubic feet;
- d) curing said cementitious mixture by autogenous heating in said mold at a temperature of about 150-180°F to form a cured material;
- e) removing said cured material from said mold and cutting said cured material into desired building shapes.

30. Method as recited in claim 29 wherein said foam activator comprises an Al paste and a surfactant, and wherein said fly ash, Portland cement and water are pre-mixed to form a slurry, said method further comprising the step of controlling temperature of said slurry to about 112-118°F to provide a temperature controlled slurry and then adding said foam activator to said temperature controlled slurry.

31. Method as recited in claim 30 further comprising adding CaCl₂ accelerator to said temperature controlled slurry.

Serial No. 09/871,089

-5-

32. Method as recited in claim 31 wherein said building shapes have compressive strengths of greater than about 350 psi and flexural strengths of from about 60-200 psi at densities of from 32 lbs. ft³ to 39 lbs. ft³.